“A STUDY ON RELATIONSHIP BETWEEN MATERNAL SERUM ZINC LEVEL AND CONGENITAL MALFORMATION OF FETUS”

ABSTRACT

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AIM OF THE STUDY

To establish the relationship between maternal serum zinc status and congenital malformations in the newborn.

METHODOLOGY

Study Centre: Institute of Obstetrics and Gynaecology, Madras Medical College, Chennai.

Study Design: Case Control Study

Period of Study: One year (September 2016 – August 2017),

Sample Size: 100 Patients.

Inclusion criteria

50 women who gave birth to congenital malformed babies irrespective of gestational age formed the study group.

50 women who gave birth to normal healthy term babies formed the control group.

Exclusion criteria

History of drug intake known to cause congenital malformations History of infections like rubella etc. History of exposure to radiation

Women who gave birth to babies with obvious clinically apparent chromosomal anomalies and nonchromosomal syndromes. Diabetic mothers, History of alcoholism, History of seizure disorders, History of zinc supplementation.

Method of study

Blood samples about 5ml in autoclaved test tubes were obtained from both study and control group patients within 24 hrs after delivery. Serum zinc estimation was done by using colorimetric.

Results

The study was undertaken to establish the relationship between maternal zinc deficiency and congenital malformations in the newborn.

1. The mean serum zinc level in the study group was 44.95 µg/dl (SD 14.4). Mean serum zinc level in the control group was 86.43 µg/dl (SD 7.88). There is statistically significant difference in the zinc level between the two groups (P value < 0.001).

The Results of the present study suggest, among the factors evaluated, that the low maternal serum zinc level is significantly associated with congenital malformation of foetus.

Conclusion: Zinc is an important metabolic substance for the mother and the foetus. Zinc deficiency appears to have a marked effect on proliferating tissues affecting nucleic acid metabolism and resulting in congenital malformations. Low zinc levels during conception or during early embryogenesis may operate as a cause of congenital malformations. Hence zinc supplementation may be started in early pregnancy or preconceptional period as prophylaxis.

Keywords: Zinc, Malformation, anencephay, hydrocephalus.